

Connections with a small parameter on a curve

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Abstract

We consider the problem of formal classification of λ -connections ("differential operators of the form $\lambda \frac{d}{dx} + f(x)$ ") on a curve when λ is small. If $\lambda = 0$, λ -connections are just Higgs bundles, and so they can be classified using spectral covers. Thus we get an explicit description of the moduli space of Higgs bundles (Hitchin fibration). The aim of this talk is to adapt this construction to connections with a small parameter, assuming some generic position conditions.